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PROBLEMS ENCOUNTERED BY COUNSELING TEACHERS WHILE PREPARING SCIENTIFIC PROJECTS: SAMPLE OF TURKEY

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Abstract:
The aim of this study is to determine the basic problems encountered by counseling teachers in the fields of science and maths while preparing scientific projects. Screening model was used in the study. The data were collected by using survey method. Being developed for this purpose; the survey form was applied to 192 project counselors from various branches (like Physics, Chemistry, Biology, Maths, Science and Technology) at public schools in Turkey. As a result of the study, it was determined that project counselors experienced some problems while preparing scientific projects; especially in the phases of selecting subjects, determining methods and writing project reports.

Keywords: project, project-based learning, scientific project, project counsellor, teacher education

1. Introduction

1.1 Science Education and Project Studies

Science education aims to develop students' creative and critical thinking skills, enable them to understand conceptual systems that form the basis of modern scientific thinking and develop their self-reliance in revealing questions and problems (Serin, 2001). It also tries to bring scientific attitudes and skills in them so that they can solve science problems throughout their lives within the bounds of their abilities (Akgün, 2000). In recent years, learning approaches have been recommended for developing these objectives and similar objectives (Railsback, 2002; Seloni, 2005). One of these approaches is project-based learning.

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Being embraced within the scope of Constructivist Learning Theory; Project-Based Learning (PBL) is a learning model that directs students toward dealing with interesting problems. PBL is a learning approach that enables students to conduct studies on a subject or a problem either individually or in groups inside or outside of school, produces original products in the end and shares the results as verbal presentations or written reports (Erdem and Akkoyunlu, 2002; Ercan, 2002; Erdem, 2002; Saban, 2002; Yurtluk, 2005; Sünbül, 2007). Gültekin (2007) suggests that PBL, which is an ideal approach for realizing learning activities, supports the independence of students with different skills, allows flexibility in curriculum and could be used with other learning approaches. Due to all these qualities, PBL is occasionally defined as an active learning method in some resources (Railsback, 2002; Seloni, 2005; quoted: Demir, 2013). PBL approach is defined as "*a learning style*" by Engel (1997); "*a basic strategy of education*" by Walton and Matthews (1989) and "*a curriculum design*" by Boud and Feletti (1997) (quoted: Pektaş, Çelik and Köse, 2009). "*Making investigation*" and "*forming a product*" are among the basic components of this process. Diffily (2002), Ayas and Zeniuk (2001) arrange the qualities of project-based learning as follows:

- Is aimed at students.
- Has a learning infrastructure.
- Creates a whole with knowledge and skills.
- Is applied in a certain process of time.
- Contains long and short term objectives.
- Is related with real life.
- Project environment gives a psychological confidence and allows individuals to take the responsibility of revealing the truth.
- Is investigation-based.
- Allows us to collect information from various resources.
- Leaders in the project organize the learning atmosphere and become a behavior model.
- Contains systematic and common reactions. Problems and mistakes encountered while preparing projects become learning opportunities.
- Results in obtaining a product.

Project-Based Learning has a number of advantages. According to Korkmaz and Kaptan (2001) and Sünbül (2007); Project-Based Learning increases students' motivation and encourages creative thinking. Project-Based Learning develops students' learning and problem-solving skills and contributes to lifelong learning. It brings the habit of scientific working and life skills in individuals and increases their self-confidence. In addition to all these, it brings the skills of using technology, scientific processes and self-control (creating goals, organizing processes, managing time) in students. It also contributes to the development of various attitudes (interest in learning and future

education), tendencies (self-control, sense of success) and beliefs (self-sufficiency) in students. It enables students to be responsible for their own learning and attend learning activities based on group work and cooperation. It paves the way for using different extents of intelligence (like kinesthetic, spatial, logical, lingual). It gives feedback to families, teachers and school administration about student performance. Students take the opportunity of applying their knowledge and skills in many fields by means of project studies. Besides them, projects may increase their interest in the lesson; because students solve real problems, study with their friends and create real materials in projects. PBL also enables students to acquire various information, concepts and principles. As it allows students to have plans for a certain goal, follow certain processes within the compass of these plans and evaluate results; it also increases students' learning and metacognition potential (Blumenfeld, Soloway, Marx, Krajcik, Guzdial, and Palincsar, 1991). By this way, it enables students to evaluate themselves and make necessary corrections. Basic philosophy of the project method is to allow children to experience life even in small scales in their environment (quoted: Sert Çıbık and Emrahoğlu, 2008). The approach of Project-Based Learning should primarily aim to "*teach how to learn*" (Vaiz, 2003). Procedure steps of the Project-Based Learning could be summarized as follows (Moursund, 1999):

- Determining goals
- Determining and defining work to be done or subjects to be embraced
- Determining necessary materials
- Forming teams
- Determining qualities and presentation styles of final reports
- Forming a work calendar
- Determining check points
- Determining evaluation criterion and sufficiency levels
- Collecting data
- Organizing and reporting data
- Presenting the project

1.2 The Starting Point of the Study

Science curriculums that have been developed in recent years in the entire world and in Turkey emphasize project-based education and science literacy. Science literacy is generally defined as a composition of scientific skills, attitudes, values, sensibilities and knowledge that are required for individuals to develop investigation-inquisition, critical thinking, problem solving and decision making skills, have life-long learning and sustain their curiosity in their environment and the world, which will only be possible through using the approach of project-based learning in science education (Kurnaz et al., 2005). Thus, curriculums emphasize the importance of Project-Based

Learning. As a consequence, scientific project contests that have been organized or supported by various public and private enterprises in Turkey in recent years have provided the opportunity of spreading project-based learning at schools. Teachers play various roles in classrooms where project-based learning applications are conducted. These roles guide in reaching knowledge rather than relaying information in the process of learning and teaching in classrooms. In other words, students regard teachers as counselors, colleagues, friends, source providers and people that attend learning activities (Çepni, 2007; İçelli, Polat and Sülün, 2007). However, it is observed that project counselors and science project counselors remain incapable in some phases of the process of preparing scientific projects while counseling students.

1.3 Aim of the Study

The aim of this study is to determine the basic problems encountered by project counselors in the fields of science and maths while preparing scientific projects.

2. Method

2.1 Research Design

This study uses screening model and Survey Method.

2.2 Assessment Instrument Used in the Study

According to the study objective; a survey form titled "Determining Problems Encountered while Preparing Scientific Projects" was prepared and applied. The survey form in question consists of 11 items (Appendix A). The first six items of the survey form aim to reveal the demographic features of teachers that answered the survey. The other six items, on the other hand, aim to collect data concerning scientific project experiences. The collected data were analyzed using a package software.

2.3 Study Group

Study group of the study consists of 192 teachers from various branches (like Physics, Chemistry, Biology, Maths, Science and Technology) at public schools in Turkey. These teachers also work as project counselors at institutions in question. Table 1 shows the distribution of teachers in the study group according to their gender.

Table 1: Distribution of Teachers in the Study Group According to Their Gender

Gender	N	%
Female	140	72,9
Male	52	27,1
Total	192	100,0

According to Table 1; 72,9% of teachers in the study group are female. Table 2 shows the distribution of teachers in the study group according to their age groups.

Table 2: Distribution of Teachers in the Study Group According to Their Age Groups

Age Group	f	%
0-25	8	4,2
26-30	46	24,0
31-35	39	20,3
36-40	38	19,8
41-46	38	19,8
47+	23	12,0
Total	192	100,0

According to Table 2; 48,5% of teachers in the study group are younger than 30, whereas the rest (51,5%) are older than 30. Table 3 shows the distribution of teachers in the study group according to their fields of graduation.

Table 3: Distribution of teachers in the study group according to their fields of graduation

Fields of Graduation	f	%
Physics Teaching	8	4,2
Chemistry Teaching	11	5,7
Biology Teaching	7	3,6
Maths Teaching	56	29,2
Science and Technology/Science Teaching	19	9,9
Other	91	47,4
Total	192	100,0

Examining Table 3; it is observed that 52,6% of the study group consist of Physics, Chemistry, Biology, Science and Technology/Science teachers. Among these teachers, 29,2% are Maths teachers. Table 4 shows the distribution of teachers in the study group according to their postgraduate education.

Table 4: Distribution of teachers in the study group according to their postgraduate education

Received postgraduate education?	f	%
Yes	44	22,9
No	148	77,1
Total	192	100,0

According to Table 4; a great majority of teachers in the study group (77,1%) had not received postgraduate education. Table 5 shows the distribution of teachers in the study group according to their service periods.

Table 5: Distribution of teachers in the study group according to their service periods

Service Periods	f	%
0-5	42	21,9
6-10	41	21,4
11-15	45	23,4
16-20	37	19,3
21+	27	14,1
Total	192	100,0

Examining Table 5; it is observed that there is a balanced distribution between the service periods of teachers in the study group.

3. Results

This section includes findings of the data acquired concerning the scientific project experiences of teachers in the study group within the scope of the survey form. The findings were obtained as a result of statistical analyses that were conducted via a package software.

3.1 Findings Obtained as a Result of Descriptive Analyses

Table 6 shows the distribution of teachers in the study group according to their project counseling experiences.

Table 6: Distribution of teachers in the study group according to their project counseling experiences

Project Counseling Experiences	f	%
Yes	71	37,0
No	121	63,0
Total	192	100,0

Examining Table 6; it is observed that 63% of the group have no scientific project experience. Table 7 shows the distribution of teachers in the study group according to their experience of counseling in an award-winner project.

Table 7: Distribution of teachers in the study group according to their experience of counseling in an award-winner project

Experience of counseling in an award-winner project	f	%
Yes	7	3,6
No	185	96,4
Total	192	100,0

Examining Table 7; only 3,6% of teachers in the group have the experience of counseling in an award-winner project. Table 8 shows the distribution of teachers in the study group according to their experience of in-service training.

Table 8: Distribution of teachers in the study group according to their experience of in-service training

In-Service Training	f	%
Yes	164	85,4
No	28	14,6
Total	192	100,0

Examining Table 8; it is observed that a great majority of teachers in the study group (85,4%) have experience of in-service training. Table 9 shows the distribution of teachers in the study group according to their experience of in-service training concerning scientific projects.

Table 9: Distribution of teachers in the study group according to their experience of in-service training concerning scientific projects

In-Service Training Concerning Scientific Projects	f	%
Yes	28	14,6
No	164	85,4
Total	192	100,0

According to Table 9; it is observed that only 14,6% of teachers have experience of in-service training concerning scientific projects. Table 10 shows the distribution of teachers in the study group according to the most challenging phase while preparing scientific projects.

Table 10: Distribution of teachers in the study group according to the most challenging phase while preparing scientific projects

The Most Challenging Phase While Preparing Scientific Projects	f	%
Student Selection	25	13,0
Subject Selection	94	49,0
Literature Review	8	4,2
Specification of Objectives and Goals	1	,5
Method Selection	5	2,6
Formation of The Study Plan	4	2,1
Data Collection	3	1,6
Recording The Data-Drawing Diagrams-Statistics	13	6,8
Project Modelling	15	7,8
Writing The Project Report	11	5,7
Other	3	1,6
Challenged by None of The Phases	10	5,2
Total	192	100,0

Examining Table 10; it is observed that a great majority of teachers in the study group (49%) are challenged by the phase of determining the project subject. This phase is followed by the phase of determining student/students to be involved in the project (13%). Table 11 shows the distribution of teachers in the study group according to the number of challenging phases while preparing scientific projects.

Table 11: Distribution of teachers in the study group according to the number of challenging phases while preparing scientific projects

Number of Challenging Phases While Preparing Scientific Projects	f	%
No Challenging	10	5,2
1	34	17,7
1-3	112	58,3
4+	36	18,8
Total	192	100,0

According to Table 11; teachers generally (58,3%) have 1-3 challenging phases while preparing scientific projects.

3.2 Findings Obtained as a Result of the X^2 (chi-square) Analysis

This section of the study seeks an answer to the question, "Does the phase challenging teachers while preparing scientific projects show a significant difference according to some demographic features of teachers?" Accordingly, the preparation phases of scientific projects were classified as "before application" and "process of application". Table 12 shows the phases of preparing scientific projects involved in these two categories.

Table 12: Phases followed before application and in the process of application while preparing scientific projects

Before Application	Process of Application
Student Selection	Data Collection
Subject Selection	Recording The Data-Drawing Diagrams-Statistics
Literature Review	Project Modeling
Specification of Objectives and Goals	Writing The Project Report
Method Selection	
Formation of The Study Plan	

3.2.1 According to gender

Table 13 shows the results of the X^2 (chi-square) analysis that was applied for determining whether the categories of challenge experienced by teachers in the study while preparing scientific projects differed according to gender or not.

Table 13: Results of the chi-square test aimed at challenges experienced by teachers while preparing scientific projects according to gender

Category of Challenge	Female		Male		X^2	p
	f	%	*f*	%		
No Challenge	8	5,8	2	4,0		
Challenge Before Application	98	70,5	35	70,0	0,293	0,864
Challenge in the Process of Application	33	23,7	13	26,0		

Examining Table 13; it is observed that the categories of challenge experienced by teachers in the study while preparing scientific projects show no significant difference according to gender (p>0,05). In other words, female and male teachers show similarities in terms of challenges they experience while preparing scientific projects.

3.2.2 According to postgraduate education

Table 14 shows the results of the unrelated measurements X^2 (chi-square) analysis that was applied for determining whether the categories of challenge experienced by teachers in the study while preparing scientific projects differed according to postgraduate education or not.

Table 14: Results of the chi-square test aimed at challenges experienced by teachers while preparing scientific projects according to postgraduate education

Category of Challenge	Postgraduate Education				X^2	p
	Yes		*No*			
	f	%	f	%		
No Challenge	2	4,5	8	5,5		
Challenge Before Application	32	72,7	101	69,7	0,167	0,920
Challenge in the Process of Application	44	22,7	145	24,8		

According to Table 14; it is observed that the categories of challenge experienced by teachers in the study while preparing scientific projects show no significant difference according to the state of receiving/not receiving postgraduate education (p>0,05). In other words, it could be suggested that teachers receiving and not receiving postgraduate education experience similar challenges while preparing scientific projects.

3.2.3 According to service periods

Table 15 shows the results of the unrelated measurements X^2 (chi-square) analysis that was applied for determining whether the categories of challenge experienced by

teachers in the study while preparing scientific projects differed according to service periods or not.

Table 15: Results of the chi-square test aimed at challenges experienced by teachers while preparing scientific projects according to service periods

Category of Challenge	Service Periods				X^2	p
	0-10 years		*11+*			
	f	%	f	%		
No Challenge	4	5,0	6	5,5		
Challenge Before Application	56	70,0	77	70,6	0,050	0,975
Challenge in the Process of Application	20	25,0	26	23,9		

According to Table 15; it is observed that the categories of challenge experienced by teachers in the study while preparing scientific projects show no significant difference according to service periods (p>0,05).

3.2.4 According to experiences of project counseling

Table 16 shows the results of the unrelated measurements X^2 (chi-square) analysis that was applied for determining whether the categories of challenge experienced by teachers in the study while preparing scientific projects differed according to experiences of project counseling or not.

Table 16: Results of the chi-square test aimed at challenges experienced by teachers while preparing scientific projects according to experiences of project counseling

Category of Challenge	Experiences of Project Counseling				X^2	p
	Yes		*No*			
	f	%	f	%		
No Challenge	0	0,0	10	8,4		
Challenge Before Application	54	77,1	79	66,4	6,707	0,035
Challenge in the Process of Application	70	22,9	119	25,2		

Examining Table 16; it is observed that the categories of challenge experienced by teachers in the study while preparing scientific projects show a significant difference according to experiences of project counseling (p<0,05). It is also observed that teachers with experience of project counseling have fewer challenges before and in the process of application while preparing projects, compared to teachers without experience of project counseling.

3.2.5 According to the existence of award-winner projects prepared under their counseling

We examined whether the categories of challenge experienced by teachers in the study while preparing scientific projects differed according to the existence of award-winner projects prepared under their counseling or not. Due to the failure of providing 20% difference between the expected and observed values, we could not perform the chi-square analysis. Thus, the results were evaluated descriptively. Table 17 shows the frequency and percentage values being calculated.

Table 17: Results of descriptive statistics aimed at challenges experienced by teachers counseling in award-winner projects while preparing scientific projects

Category of Challenge	Award-Winner Projects Prepared Under Their Counseling			
	Yes		*No*	
	f	%	f	%
No Challenge	0	0,0	10	5,5
Challenge Before Application	2	28,6	131	72,0
Challenge in the Process of Application	5	71,4	41	22,5

According to Table 17; it is observed that teachers counseling in award-winner projects generally experience challenges in the process of application, whereas teachers not counseling in such projects experience challenges before application.

3.2.6 According to the state of receiving in-service training

Table 18 shows the results of the unrelated measurements X^2 (chi-square) analysis that was applied for determining whether the categories of challenge experienced by teachers in the study while preparing scientific projects differed according to their state of receiving in-service training or not.

Table 18: Results of the chi-square test aimed at challenges experienced by teachers while preparing scientific projects according to the state of receiving in-service training

Category of Challenge	In-Service Training				X^2	p
	Yes		*No*			
	f	%	f	%		
No Challenge	6	3,7	4	14,3		
Challenge Before Application	113	70,2	20	71,4	6,396	0,041
Challenge in the Process of Application	42	26,1	4	14,3		

Examining Table 18; it is observed that the category challenging teachers in the study while preparing scientific projects shows a significant difference according to their state of receiving in-service training ($p<0,05$). Accordingly, teachers not receiving in-service training experience fewer challenges than teachers receiving this training. It is also

observed that teachers receiving in-service training experience greater challenges in the process of application than teachers not receiving in-service training.

3.2.7 According to the state of receiving in-service training for preparing scientific projects

Table 19 shows the results of the unrelated measurements X^2 (chi-square) analysis that was applied for determining whether the categories of challenge experienced by teachers in the study while preparing scientific projects differed according to their state of receiving in-service training for preparing scientific projects or not.

Table 19: Results of the chi-square test aimed at challenges experienced by teachers while preparing scientific projects according to the state of receiving in-service training for preparing scientific projects

Category of Challenge	In-Service Training for Preparing Scientific Projects				X^2	p
	Yes		*No*			
	f	%	f	%		
No Challenge	0	0,0	10	6,2	5,701	0,058
Challenge Before Application	16	59,3	117	72,2		
Challenge in the Process of Application	11	40,7	35	21,6		

According to Table 19; it is observed that the category challenging teachers in the study while preparing scientific projects shows no significant difference according to their state of receiving in-service training for preparing scientific projects ($p>0,05$). It is also observed that teachers receiving and not receiving in-service training for preparing scientific projects experience greater challenges before application.

3.2.8 According to the number of the most challenging phases

Table 20 shows the results of the unrelated measurements X^2 (chi-square) analysis that was applied for determining whether the categories of challenge experienced by teachers in the study while preparing scientific projects differed according to the number of the most challenging phases or not. Answers of teachers who stated that they had not experienced any challenges while preparing scientific projects were not included in this comparison.

Table 20: Results of the chi-square test aimed at challenges experienced by teachers while preparing scientific projects according to the number of the most challenging phases

Category of Challenge	Number of Challenging Phases						X^2	p
	1		*1-3*		*4 +*			
	f	%	f	%	f	%		
Before Application	24	75,0	83	74,8	26	72,2	0,103	0,950
In the Process of Application	8	25,0	28	25,2	10	27,8		

Examining Table 20; it is observed that the category challenging teachers in the study while preparing scientific projects shows no significant difference according to the number of the most challenging phases (p>0,05). According to Table 20; teachers who claimed that they experienced challenges in the 1st phase, 1-3 phases or 4 and more phases while preparing scientific projects experienced challenges mostly before application.

4. Conclusion, Discussion and Recommendations

As a result of the study, it was determined that teachers generally experienced problems in the phases of subject selection, method selection and writing the project report while preparing projects. Various studies (Akpınar and Ergin, 2005; Çelik, 2003; Engin and Taştan, 2008; Mergendoller and Thomas, 2001) show that teachers using the project-based learning method experience various problems. Çelik (2003) arranges the aforementioned problems as; (1) teacher-centered problems, (2) program-centered problems, (3) student-centered problems, (4) administration and supervision problems, (5) physical condition problems. Mergendoller and Thomas associate these problems with (2001); (1) time management, (2) starting to comprehend, (3) students, (4) administration of student groups, (5) working with individuals outside of classroom, (6) failure of reaching sources other than technological sources and (7) project development process and student assessment process. In their study, Akpınar and Ergin (2005) also emphasized that teachers would experience some challenges (like noise in classroom during group work, some problems between group members, time limitation, students' perception of experiments as entertainment, equipment problems) in group work, project preparation, evaluation, determining preliminary information and starting the lesson. Results of this study show many similarities with results of the studies by Çelik (2003), Mergendoller and Thomas (2001) and Akpınar and Ergin (2005).

Examining the project counseling experiences of teachers in the study, it is observed that 63% of the group have no experience of preparing scientific projects. This rate is too high for a teacher group of 192. Among the remaining 37% teachers with project counseling experience, only 3,6% have the experience of counseling in a award-winner project.

One of the most striking findings of the study is that only 14,6% of teachers in the study group have the experience of preparing scientific projects. 49% of teachers in the study group have the greatest challenge in determining the project subject in the process of preparing scientific projects. On the other hand, examining the distribution of teachers according to the most challenging phase while preparing scientific projects; it is observed that 58,3% teachers are challenged by 1-3 phases while preparing projects. Apart from these, it is observed that categories of challenge experienced by teachers in the study while preparing scientific projects do not show a significant difference according to their gender, postgraduate education and service periods ($p>0,05$). In other words, it could be suggested that challenges specified by teachers while preparing scientific projects show similarities no matter what gender, postgraduate education and service periods they have.

According to the study, it is observed that categories of challenge experienced by teachers while preparing scientific projects show a significant difference according to their experience of counseling in scientific projects ($p<0,05$). Accordingly, teachers with experience of project counseling have fewer challenges before and after application while preparing projects, compared to those without experience of project counseling. Additionally, teachers with experience of award-winner projects prepared under their counseling are generally challenged in the process of application, whereas teachers with experience of non-awarded projects under their counseling are challenged before application.

It is observed that the categories of challenge experienced by teachers in the study while preparing scientific projects show a significant difference according to their state of receiving in-service training. In this context, teachers not receiving in-service training experience fewer challenges than teachers receiving in-service training and teachers receiving in-service training experience greater challenges in the process of application than teachers not receiving in-service training. Teachers not receiving in-service training experience fewer challenges than teachers receiving in-service training, which is particularly a striking finding. It is also observed that categories of challenge experienced by teachers while preparing scientific projects do not show a significant difference according to their state of receiving in-service training for preparing scientific projects. These two findings show that in-service training applications generally fail to fully achieve their goal as they are not application-oriented. Besides, it is observed that teachers receiving and not receiving in-service training for preparing projects experience challenges generally before application.

According to the results of the study, the following suggestions could be made:

- Encourage teachers to prepare scientific projects by making some regulations (like fee, service).

- Provide equipment, consumption materials for teachers via school administrations in the process of preparing projects.
- In his study that was conducted with 96 preservice teachers; Ay (2013) reported that preservice teachers were stranger to PBL applications, had a difficulty in comprehending the application at first; but developed highly positive attitudes as they realized its effects and comprehended the process and demanded the continuity of PBL studies despite all challenges and disadvantages. Thus, it is suggested to provide bachelor-degree-level trainings for preservice teachers concerning the processes of preparing projects.
- Provide in-service trainings for teachers concerning scientific projects. However, in-service trainings in question should be conducted as application-oriented workshops rather than theoretical studies.

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Appendix A

Survey Form: Determination of Problems Encountered in Preparing Scientific Projects

Dear Colleague;

This survey form aims to determine problems encountered by primary and secondary school Science and Technology, Physics, Chemistry, Biology and Maths teachers while preparing Scientific Projects. Reliability of findings and results of this survey depends on your attention and truthfulness while answering each item in the survey. You don't need to write your name or your institution's name on the survey form. Thank you for your contributions. (Please tick " ✔ " the box on the right of the option that suits you best.)

Dr. Yasin ÜNSAL

1. Gender: Female ☐ Male ☐

2. Age

25 and younger ☐ 26-30 ☐ 31-35 ☐
36- 40 ☐ 41-46 ☐ 47 and older ☐

3. Graduation branch/field?

Physics ☐ Chemistry ☐ Biology ☐
Maths ☐ Science and Technology ☐
Other ☐ Please Indicate : ……

4. Have you received postgraduate education? *Yes* ☐ *No* ☐

If your answer is "Yes", the Postgraduate Program : ……..……..……
Doctorate Program : ……..……..……

5. Duration of service:

0-5 years ☐ 6-10 years ☐ 11-15 years ☐ 16-20 years ☐ 21 and above ☐

6. Have you ever worked as a project counselor before?

Yes, I have. ☐ *No*; I have never got a project prepared before. ☐

If your answer is "Yes", please indicate how many times you have worked as a project counselor.

1 time ☐ 2 times ☐ 3 times and above ☐

7. Do you have a project that was prepared under your counseling and was awarded?

Yes ☐ *No* ☐

If your answer is "Yes",

Name of the Contest : ……..……...……..……
Your Degree : …..…….……..

8. Have you ever attended an in-service training course before?

Yes, I have. ☐ *No,* I haven't ☐

If your answer is "Yes", please indicate how many times you have attended.

1 time ☐ 2 times ☐ 3 times and above ☐

9. Have you ever attended an in-service training course concerning <u>scientific project preparation</u> before?

Yes, I have. ☐ *No,* I haven't ☐

10. What is the <u>phase that challenges you the most</u> while preparing scientific projects? (Please select only one of the following.)

Student selection	☐	Formation of the study plan	☐
Subject selection	☐	Data collection	☐
Data collection-Literature review	☐	Recording the data, drawing diagrams and statistical procedures	☐
Specification of objectives and goals	☐	Evaluating and interpreting the results	☐
Method selection	☐	Project modeling	☐
Writing the project report	☐	Other: ……	

11. What is the <u>phase that challenges you the most</u> while preparing scientific projects? (You can select more than one of the following.)

Student selection	☐	Formation of the study plan	☐
Subject selection	☐	Data collection	☐
Data collection-Literature review	☐	Recording the data, drawing diagrams and statistical procedures	☐
Specification of objectives and goals	☐	Evaluating and interpreting the results	☐
Method selection	☐	Project modelling	☐
Writing the project report	☐	Other: ……	